

## A New Species of *Schoenoplectus* (Cyperaceae) from Australia

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*Schoenoplectus blakei* Hayas., a new species from Australia, is described. It is distinguished from Australian *S. dissachanthus* (S. T. Blake) J. Raynal by the trifid styles, shape, size, and surface structure of nutlets, smaller glumes, and three stamens.

**Key words:** Australia, *Cyperaceae*, new species, *Schoenoplectus blakei*, *Schoenoplectus* sect. *Supini*.

*Schoenoplectus* in Australia includes 11 species, six of which belong to *Schoenoplectus* sect. *Supini* (Cherm.) J. Raynal (Raynal 1976, Wilson 1981). While examining specimens of *S. dissachanthus* (S. T. Blake) J. Raynal, an Australian endemic of the section *Supini*, I encountered specimens that have been annotated as '*Scirpus dissachanthus* S. T. Blake vel aff.' by P. K. Latz, who collected them. The plant in question has trifid styles and trigonous nutlets, while *S. dissachanthus* has bifid styles and nutlets that are plano-convex or biconvex.

Similar variations in the morphology of styles and nutlets within *Schoenoplectus dissachanthus* have been observed by Rye (1997), who stated there are two variants, i.e., 'typical variant' and 'trimerous variant' within the species in Western Australia. The 'typical variant' represents *S. dissachanthus* as recognized in this paper (cf. key and specimens examined below) since it was described by her as 'Flowers all or mostly with 2 stamens and a 2-branched style. Nut usually biconvex or plano-convex...'. This description agrees with the type of *Scirpus dissachanthus* S. T. Blake. The 'trimerous variant' was described as 'Flowers all or

mostly with 3 stamens and a 3-branched style. Nut usually 3-angled...'. The description of the 'trimerous variant' and the line illustrations of its nutlets presented in Rye (1997) agree with the characters of the plant I noted above.

The 'trimerous variant' is distributed in Western Australia and Northern Territory, while the 'typical variant' is found in Western Australia, Northern Territory, South Australia, Queensland, New South Wales, and Victoria. The 'trimerous variant' occurs further south than the 'typical variant' in Western Australia and Northern Territory, and the two variants slightly overlap in range (Rye 1997). Rye (1997) did not recognize the 'trimerous variant' as a distinct taxon, although infraspecific taxa are recognized in *S. lateriflorus* (J. F. Gmel.) Lye and *S. proximus* (Steud.) J. Raynal of *Schoenoplectus* sect. *Supini*, based on variations in flowers whether trimerous or dimerous (Lye 1983, Hayasaka 2005).

I compared the specimens in question with those of *Schoenoplectus dissachanthus*, and detected differences in the size and surface structure of nutlets, and the size of glumes, in addition to the characters described by

Rye (1997). In *Schoenoplectus* sect. *Supini*, sizes of nutlets and glumes are frequently used to distinguish between species (Lye 1971, Raynal 1976), which is taken into consideration here. Based on the characters indicated in the following key, I recognize the plant as a distinct species and name it *Schoenoplectus blakei*.

1. Styles trifid; nutlets sharply trigonous, 0.8–1 mm wide, transversely finely rugulose with 25–30 obtuse rugae; glumes 1.4–1.7 mm long; stamens 3 ..... *S. blakei*  
 1. Styles bifid; nutlets plano-convex or biconvex, 1–1.3 mm wide, transversely rugose with 13–18 acute rugae; glumes 2.2–3.1 mm long; stamens 2 .....  
 ..... *S. dissachanthus*

***Schoenoplectus* (sect. *Supini*) *blakei***  
 Hayas., sp. nov. [Figs. 1, 2a, 2c]

Affinis *Schoenoplecto dissachantho* (S. T. Blake) J. Raynal, sed stylis trifidis, nucibus acute trigonis angustis 0.8–1 mm latis transverse subtiliter rugulosis cum rugis obtusis 25–30, glumis brevioribus 1.4–1.7 mm longis, et staminibus 3 differt.

**TYPE:** AUSTRALIA. Northern Territory. Mulga Park Station, 25°36'S, 131°48'E, 28 Apr. 1977, P. K. Latz 5013 (holotype–BRI 236911; isotype–BRI 237203). According to the original label, these specimens are duplicates from NT.

Tufted, glabrous, amphicarpous annual, to 15 cm high. Rhizome inconspicuous, hidden among culm-bases. Roots finely fibrous. Culms spreading or ascending, densely tufted in small clumps, obtusely several-angled, striate, 2–10 cm long, 0.5–0.7 mm wide in the middle, stramineous when dried, nodeless or sometimes 1-noded ca. 1 cm above the base. Leaves 2, both basal or sometimes the upper one cauline; lower sheath short, scale-like, hyaline, venulose, upper sheath tubular, 0.5–3 cm long, thin-chartaceous with contralaminar side hyaline-

banded, venulose, stramineous, loosely clothing the culm, orifice oblique, margin hyaline, apex apiculate or narrowed into blade; blades reduced to mucro or usually acerose, to 3.5 cm long, ca. 0.7 mm wide at the base, glabrous, margin smooth, apex obtuse, callous; ligules entire, to ca. 0.5 mm long, rounded. Inflorescences pseudolateral, capitate with 1–8 spikelets, 0.5–1 cm across; involucre bract solitary, culm-like, erect, 2–6 cm long, shorter to longer than culm, striate, canaliculate, stramineous when dried, base slightly broadened with adaxial side open and hyaline-margined, apex obtuse, callous. Spikelets sessile, ovoid to oblong-ovoid, several-angled, 3–5 mm long, 1.5–2.5 mm wide, base rounded, apex subacute, to ca. 15-flowered. Glumes ovate to broadly ovate, cymbiform, arcuate-keeled, 1.4–1.7 mm long, ca. 1 mm wide, rather loosely imbricate, deciduous, wholly hyaline, margin smooth, abaxial surface glabrous, slightly lustrous, stramineous to pale brown on both sides, pale green along midvein, apex entire, acute, lateral veins apparently absent, midvein thin, smooth, prolonged into minute mucro slightly exceeding the glume apex. Stamens 3; filaments flattened, ribbon-shaped, 1.2–1.5 mm long, faintly 1-veined, smooth, pale brown, caducous; anthers oblong, ca. 0.2 mm long, light yellow, connective apex acute, minute, pale brown, smooth. Styles trifid, flattened, 0.6–1 mm long, pale brown, smooth. Perianth segments 5–6 or absent, setiform, unequal in length, one-fifth of to slightly shorter than nutlet body, retrorsely minutely spinulose and only proximally smooth, slender for the whole length, pale brown, appressed to nutlet. Nutlets broadly obovate, sharply trigonous, almost equilateral or slightly compressed, 1.1–1.4 mm long including beak (nutlet body 0.9–1.2 mm long), 0.8–1 mm wide, angles sharp, sides concave, transversely finely rugulose with 25–30 obtuse sinuate rugae, blackish brown at maturity, lustrous, base broadly cuneate,

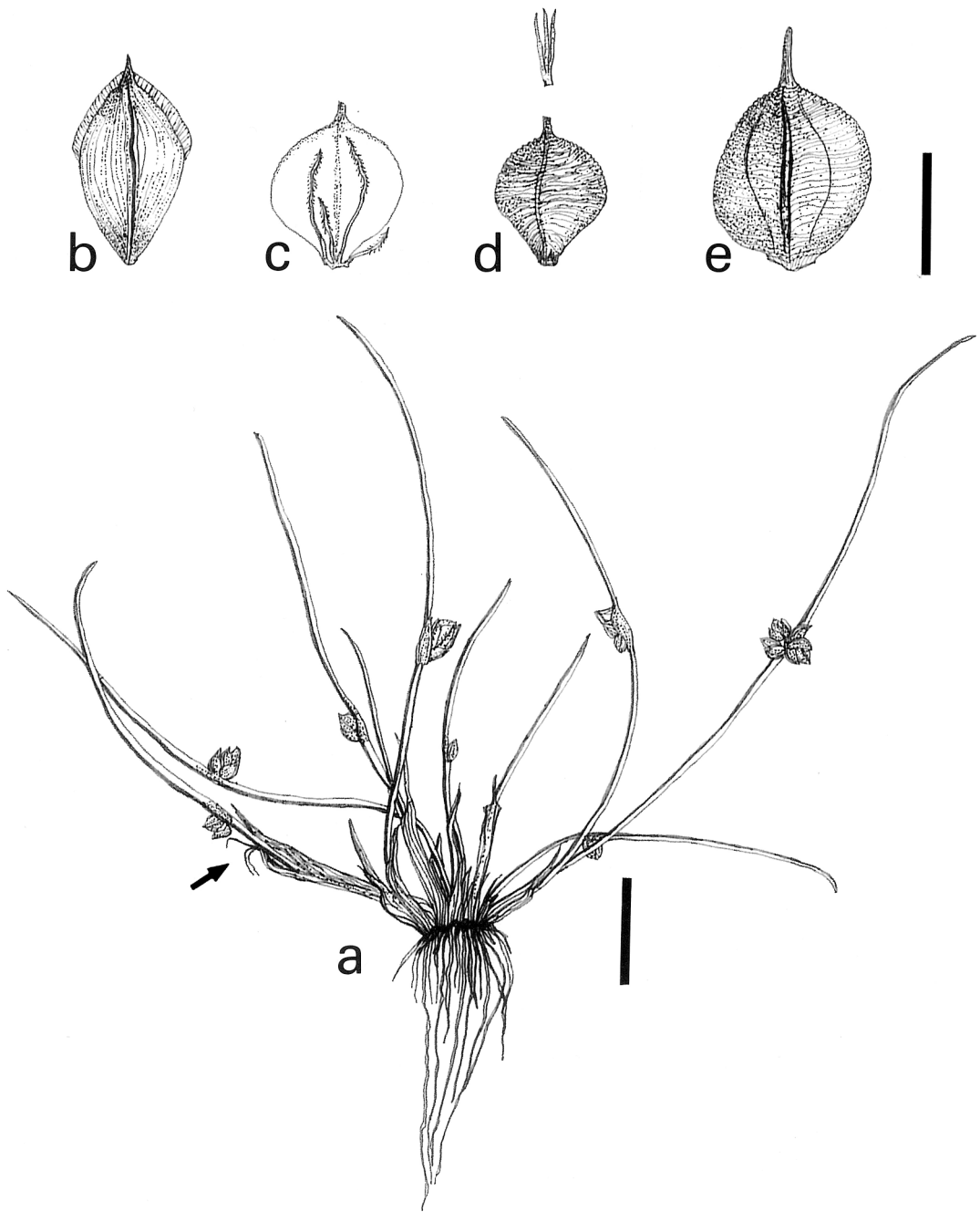


Fig. 1. *Schoenoplectus blakei* (a, b, d, e: isotype; c: holotype). a. Habit (arrow: style of a basal flower projecting from orifice of leaf sheath). b. Glume (abaxial side). c. Nutlet (abaxial side) with perianth segments. d. Nutlet (abaxial side) without perianth segments and style. e. Basal nutlet (abaxial side). Scale: a = 1 cm, b–e = 1 mm. Drawn by E. Hayasaka.

apex rounded and cuspidate with beak ca. 0.2 mm long. Basal solitary flower often present at culm-base in axil of leaf sheath: basal flower sessile, pistillate, 1 per culm; style of basal flower trifid, slender, elongate and projecting from orifice of leaf sheath, pale brown, smooth; basal nutlet broadly ovate, compressed trigonous, adaxial side concave, abaxial sides slightly convex, 1.8–2 mm long including beak (nutlet body 1.5–1.6 mm long), ca. 1.3 mm wide, transversely finely rugulose with ca. 30 obtuse sinuate rugae, blackish brown at maturity, lustrous, base rounded, apex rounded and cuspidate with beak ca. 0.5 mm long; perianth segments of basal flower present, ca. 2, setiform, ca.  $\times 0.5$  of basal nutlet body, smooth and very slender for the whole length, pale brown, caducous.

Distribution. Australia: Northern Territory. Rare in damp sand, seasonal swamp with *Eragrostis* and samphires.

The specific epithet is dedicated to Stanley T. Blake (1911–1973) for his contribution to the taxonomy of Australian *Schoenoplectus* as well as other genera.

Nutlets of *Schoenoplectus blakei* are transversely rugulose with more numerous rugae than those of *S. dissachanthus* (Figs. 2a, 2b). The rugae of nutlets are formed from the exocarp cells that are elongate and folded. The rugae of *S. blakei* are obtuse (Fig. 2c), whereas those of *S. dissachanthus* are acute and denticulate by protrusion of each individual cell (Fig. 2d).

Perianth segments are present in the holotype of *Schoenoplectus blakei* (Fig. 1c) but they are absent (only rudimentary bases of perianth segments are seen at the base of nutlets) in the isotype (Fig. 1d). Since similar variation in the presence or absence of perianth segments is also observed in *S. dissachanthus*, perianth segments are not used as diagnostic characters between the two species.

*Schoenoplectus blakei* is an amphi- carpous

species, which frequently produces a basal pistillate flower at the base of a culm in the axil of a leaf sheath (Fig. 1a, arrow), and a nutlet that is larger than those from spikelets (Fig. 1e). Based on this habit *S. blakei* is here included in *Schoenoplectus* sect. *Supini*. The section was revised by Raynal (1976), who placed 21 species in it, and recently three more species have been added (Scholz 1981, Smith 1995, Hayasaka 2003). The number of species in the section is now 25 including the new species.

Specimens of *Schoenoplectus dissachanthus* examined. **Australia. NEW SOUTH WALES.** N. Far W. Plains, 44 km ESE of Wanaaring on Bourke road, 1.6 miles [2.5 km] past Avondale (& Louth) road turnoff, 29°49'S, 144°34'E, 6 Nov. 1971, A. N. Rodd 1921 (BRI). **NORTHERN TERRITORY.** 10 m. N of Tea Tree Roadside Inn, Hanson River, Jan. 1971, P. K. Latz 1261 (BRI); 12 mile south of A.Z.R.I., 23°54'S, 133°46'E, 23 Apr. 1974, P. K. Latz 4916 (BRI); 14 m. S. Rabbit Flat, 20°27'S, 129°53'E, 21 Jul. 1973, P. K. Latz 4067 (BRI); 4 m. NNW of Redlark Bore, Coriston Station, 14 Jan. 1971, P. K. Latz 1226 (BRI); 7 miles SE of Birrindudu Station, 6 Jul. 1949, R. A. Perry 2366 (BRI); Burrabelly W/H, 20°38'S, 135°10'E, 16 Feb. 1972, P. K. Latz 2206 (BRI); Dalhousie and Crown Point, May–Sep. 1920, H. Basedow s.n. (BRI); Elkedra R., 21°11'S, 135°27'E, 17 Feb. 1972, P. K. Latz 2234 (BRI); Mataranka Township, 14°55'S, 133°05'E, 2 Jun. 1973, P. K. Latz 3759 (BRI); Mt. Doreen Station, 22°26'S, 130°42'E, 15 Jan. 1972, P. K. Latz 2059 (BRI, P); Mt. Wedge H/S, 22°45'S, 132°09'E, 20 Jan. 1972, P. K. Latz 2156 (BRI); Napperby Station, 22°57'S, 132°39'E, 12 Jan. 1972, P. K. Latz 1960 (BRI); Utopia Station, 22°09'S, 134°38'E, 17 Feb. 1972, P. K. Latz 2247 (BRI); Wilfred Waterhole, 18°56'S, 137°55'E, 27 Jul. 1971, P. K. Latz 1677 (BRI). **QUEENSLAND. Burke District:** 16 km W of Alexandra R. on Cloncurry-Burketown Rd., 18°35'S, 140°09'E, 26 Apr. 1974, S. Jacobs 1283a (P); L Creek, 1 km W of Inverleigh Homestead, 70 km W of Normanton, 18°01'S, 140°33'E, Apr. 1986, V. J. Neldner & T. D. Stanley 2460 (BRI). **Maranoa District:** 11 km ESE of Mulga Downs Homestead, 28°50'S, 147°14'E, 5 May. 1982, J. Neldner & M. B. Thomas 938 (BRI); About 30 miles west of St. George, ca. 600 ft, 15 Mar. 1936, S. T. Blake 10817 (BRI); Boatman Station, 'Bluebush Swamp', 22 Mar. 1947, S. L. Everist 2855 (BRI); Noonadoo near Dirranbandi, in wet places near tank, ca. 600 ft, 16 May 1939, S. T. Blake 14022 (BRI). **Mitchell District:** 16 miles NW of



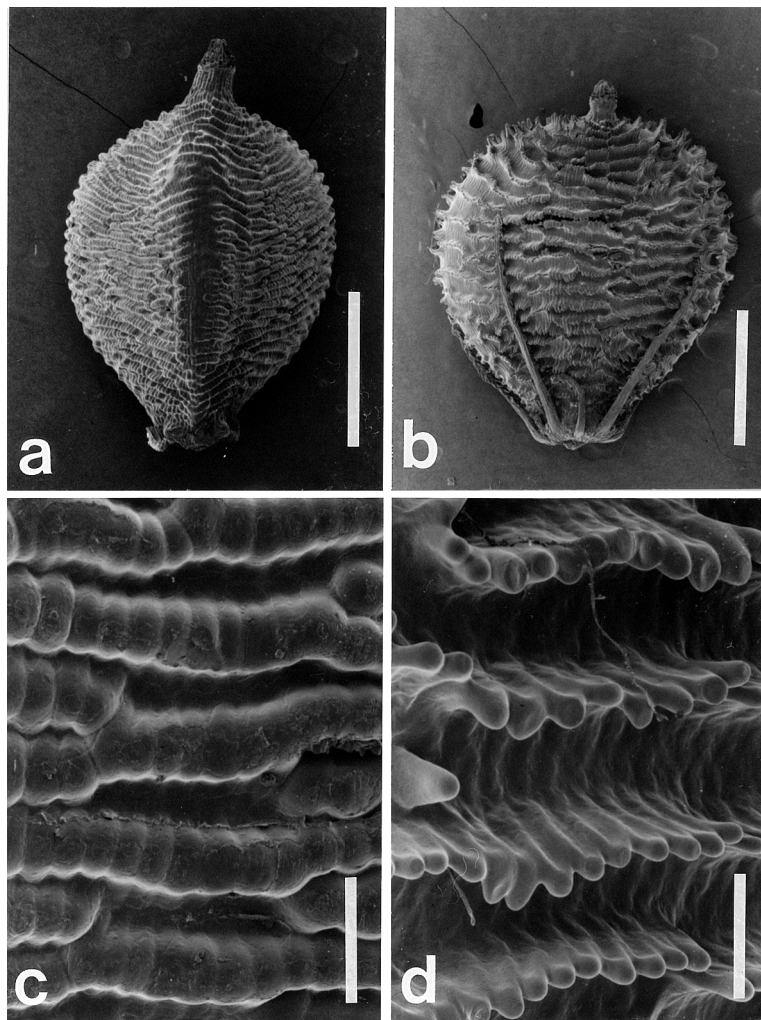


Fig. 2. Nutlets (abaxial side) of *Schoenoplectus blakei* (a, c: isotype) and *S. dissachanthus* (b, d: P. K. Latz 4916, BRI). a, b. A whole nutlet. c, d. Outer surface of exocarp. Scale: a, b = 500 µm; c, d = 50 µm.

Longreach, 23°15'S, 144°05'E, Mar. 1953, D. Davidson 351 (BRI); Geera, east of Barcaldine, 900 ft, 6 Dec. 1935, S. T. Blake 10362 (BRI). **North Kennedy District:** Burdekin River, Valley of the Lagoons, ca. 100 km SE of Mt. Garnet, 18°41'S, 145°08'E, 400 m, 10 Jul. 1981, P. R. Sharpe 2886 (BRI); Burdekin River, 30 km N of Charters Towers at the Big Bend in the River, 19°51'S, 146°08'E, 1 Jul. 1981, P. R. Sharpe 2792 (BRI); Near Mt. Woodhouse, SW of Ayr, 19°05'S, 147°00'E, 5 Oct. 1950, S. T. Blake 18659 (BRI). **South Kennedy District:** 10 km S of

Bowie, 21°50'S, 145°58'E, 340 m, 24 Jun. 1991, E. J. Thompson & R. J. Henderson 103 (BRI). **Warrego District:** 10 km SE of Charleville along Boatman Road, 26°28'S, 146°19'E, 23 Mar. 1976, R. W. Purdie & D. E. Boyland 040 (BRI); 6.4 km N of Quilpie, 26°33'S, 144°17'E, 18 Apr. 1971, D. E. Boyland 3104 (BRI); Currawinya National Park, Eulo to Hungerford road, 28°43'35"S, 144°41'54"E, 20 Mar. 1997, P. I. Forster & M. Watson PIF20524 (BRI); Currawinya National Park, Ten Mile Camp, 28°51'58"S, 144°27'57"E, 18 Mar. 1997, P. I. Forster & M. Watson

PIF20372 (BRI); Dynevor Downs, E of Thargomindah, 28°00'S, 144°20'E, ca. 500 ft, 22 May 1939, S. T. Blake 14080 (BRI 010605, holotype of *Scirpus dissachanthus* S. T. Blake). **SOUTH AUSTRALIA.** Murray River, 1890, Nehl s.n. (BRI).

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- 早坂英介：オーストラリアからのフトイ属（カヤツリグサ科）の1新種
- オーストラリアから新種 *Schoenoplectus blakei* Hayas. を記載した。本種はオーストラリアの *S. dissachanthus* (S. T. Blake) J. Raynal に似るが、花柱が3岐すること、果実の形と大きさ、および表面の構造が異なること、小穂の鱗片が小さいこと、および雄蕊が3個であることで異なる。

（東北大学植物園）